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File Code: 3410 **Date:** October 5, 1998
Route To:

Subject: 1998 Insect and Disease Aerial Detection Survey

To: Area Director
Bureau of Indian Affairs
Phoenix Area Office
P.O. Box 10
Phoenix, AZ 85001

The annual insect and disease aerial detection survey was conducted over the Fort Apache Indian Reservation on September 3,4 and 23, 1998. Enclosed you will find one copy each of 4 maps depicting the insect and disease conditions on the Reservation. To facilitate future analysis needs and to standardize national reporting, conditions are now being recorded on USGS 1:100,000-scale metric topographic maps.

A decrease in bark beetle activity was mapped in 1998 (252 acres) compared to 1997 (8,499 acres). The majority of the bark beetle mortality was located in the central portion of the Reservation along Cibecue Ridge, and in the vicinity of Cottonwood, Turkey, Blue Spring, Mud Creek, and Jumpoff Canyons. Mortality is being attributed to *Ips* spp. and western pine beetle, however, Jill Wilson discovered in 1996 that bark beetle mortality on Fort Apache was generally due to three different bark beetles commonly found in ponderosa pine, *Ips* spp., western pine beetle, and roundheaded pine beetle. It is likely that the recorded mortality is actually due to all three bark beetles. Mortality occurred in small pockets of 1-10 trees and over larger areas in polygons of up to 100 trees.

Douglas-fir and true fir mortality decreased in 1998. Douglas-fir beetle mortality was recorded on 6 acres and true fir mortality on 13 acres.

Aspen defoliation increased in 1998. Defoliation ranged from light to heavy with defoliation detected on a total of 740 acres (light 60 acres, moderate 350 acres and heavy 330 acres). Only 460 acres of aspen defoliation was recorded in 1997.

No western spruce budworm defoliation was apparent on the Reservation in 1998.

Spruce aphid, *Elatobium abietinum*, defoliation continued in the winter of 1997-98. Insect damage occurred at higher elevations than had been previously recorded on the Reservation. A total of 1,185 acres of defoliation was recorded, down from 16,165 acres recorded in 1997. Jill Wilson of our office and Ann Lynch of the Rocky Mountain Research Station have been investigating this insect and have found high levels of mortality in previously defoliated trees on the Reservation.

Fire was recorded on 403 acres of the Reservation.

If you have any questions concerning the survey or the information included here, please feel free to contact Bobbe Fitzgibbon (520-556-2072) or Steve Dudley (520-556-2071).

/s/ Borys M. Tkacz

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